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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,546	12/30/2003	Alex Nugent	1000-1215	9090

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EXAMINER
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HIRL, JOSEPH P

ART UNIT	PAPER NUMBER
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2129

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/23/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

**Application No.**

10/748,546

**Applicant(s)**

NUGENT, ALEX

**Examiner**

Joseph P. Hirl

**Art Unit**

2129

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 21-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>A</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This Office Action is in response to an AMENDMENT entered November 29, 2006 for the patent application 10748546 filed on December 30, 2003.
2. All prior office actions are fully incorporated into this Final Office Action by reference.

### ***Status of Claims***

3. Claims 21-41 are pending.

### ***Product by Process***

#### ***Rejection, 35 USC 102 or 103(a)***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 21-41 rejected under 35 USC 102(b) as anticipated by or in the alternative, under 35 U.S.C. 103(a) as being obvious over Widrow (USPN 3,222,654, referred to as **Widrow**).

Widrow teaches a logic circuit and electrolytic memory element (perceptron) illustrated in Figs. 1 and 2 and described in the text of the related patent and more specifically @ **Widrow**, c1:10-14; c1: 40-48; c3:18-28. Other related text of Widrow are identified in prior office actions.

The applicant has disclosed a physical neural network that achieves functionality by the process of applying an electric field across two electrodes that are immersed in a liquid dielectric solvent containing nanoconductors. It is through the process of applying the electric field that the nanoconductors align to form the physical neural network nanoconnectors between pre-synaptic and post-synaptic electrodes. Such is a product by process ... neural network developed by the process of applying the electric field. In re Brown, 459 F.2d 531, 535. 173 USPQ 685, 688 (CCCPA 1972) applies.

***Response to Arguments***

8. Applicant's arguments filed on November 29, 2006 related to Claims 21-41 have been fully considered but are not persuasive.

The Examiner acknowledges applicant's Remarks contained on pages 10 -27 of the response dated November 29, 2006. From the MPEP 2113, the controlling point of concern is : "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself." (In re Thrope, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) Applicant's invention discloses a physical neural network liquid state machine utilizing nanotechnology. The prior art of Widrow (USPN 3,222,654) anticipates a physical neural network liquid state machine @Figs. 1 and 2. Applicant has not provided an explicit definition of nanotechnology and consistent with ¶ 12. below, the molecular technology of Widrow applies (electrolyte: Fig. 2). Applicant associates "molecular technology" with embodiments of the disclosed invention @ ¶ 001 of the specification. Applicant is reminded that it is "The claims and only the claims form the metes and bounds of the invention." Hence, limitations as cited in the independent claims 21, 38, and 40 clearly identify the product as a liquid state machine formed and associated with a neural network of molecular connections. Applicant's discussions related to the characteristics of the "liquid" are merely part of the process to achieve a neural network and are not relevant under a product-by-process review.

Further comments: at ¶ 106 of the specification, applicant applies an AC field across the terminals and under such conditions, current will flow in the circuit with the

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dielectric. Actually, the only time a current will not flow in a circuit with a perfect dielectric is when the application of a DC field has reached steady state. Concerning an electrolyte, if a high portion of the solute does not dissociate to form free ions, such weak electrolyte will exhibit dielectric properties. Conversely, if the voltage across the dielectric exceeds the breakdown level, substantial current will flow.

### ***Examination Considerations***

9. The claims and only the claims form the metes and bounds of the invention.

"Office personnel are to give the claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. *In re Prater*, 415 F.2d, 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969)" (MPEP p 2100-8, c 2, I 45-48; p 2100-9, c 1, I 1-4). The Examiner has full latitude to interpret each claim in the broadest reasonable sense. Examiner will reference prior art using terminology familiar to one of ordinary skill in the art. Such an approach is broad in concept and can be either explicit or implicit in meaning.

10. Examiner's Notes and comments are provided with the cited references to prior art to assist the applicant to better understand the nature of the prior art, application of such prior art and, as appropriate, to further indicate other prior art that maybe applied in other office actions. Such comments are entirely consistent with the intent and spirit

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of compact prosecution. However, and unless otherwise stated, the Examiner's Notes are not prior art but a link to prior art that one of ordinary skill in the art would find inherently appropriate.

11. Unless otherwise annotated, Examiner's statements are to be interpreted in reference to that of one of ordinary skill in the art. Statements made in reference to the condition of the disclosure constitute, on the face of it, the basis and such would be obvious to one of ordinary skill in the art, establishing thereby an inherent prima facie statement.

12. Examiner's Opinion: ¶¶ 9.-11.apply. The Examiner has full latitude to interpret each claim in the broadest reasonable sense.

### ***Conclusion***

13. Claims 21-41 are rejected.

### ***Correspondence Information***

Any inquiry concerning this information or related to the subject disclosure should be directed to the Primary Examiner, Joseph P. Hirl, whose telephone number is (571) 272-3685. The Examiner can be reached on Monday – Thursday from 6:00 a.m. to 4:30 p.m.

If attempts to reach the Examiner by telephone are unsuccessful, the

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Examiner's supervisor, David R. Vincent can be reached at (571) 272-3080.

Any response to this office action should be mailed to:

Commissioner of Patents and Trademarks,

Washington, D. C. 20231;

Hand delivered to:

Receptionist,

Customer Service Window,

Randolph Building,

401 Dulany Street,

Alexandria, Virginia 22313,

(located on the first floor of the south side of the Randolph Building);

or faxed to:

(571) 273-8300 (for formal communications intended for entry.

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you have any questions on access to Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll free).

 Joseph P. Hurl

Primary Examiner

January 16, 2007